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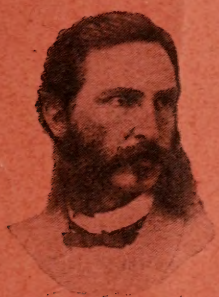

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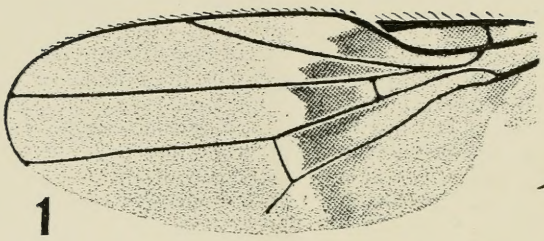

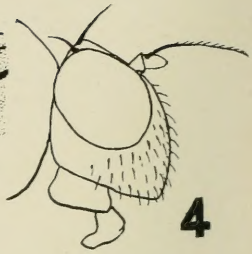

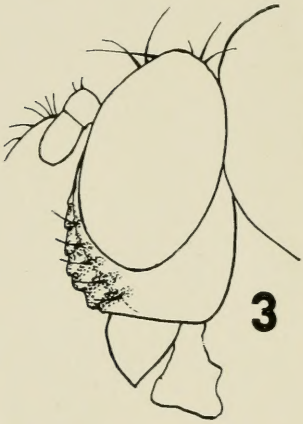

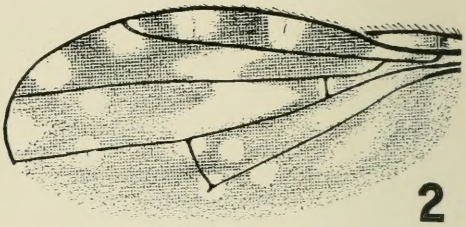

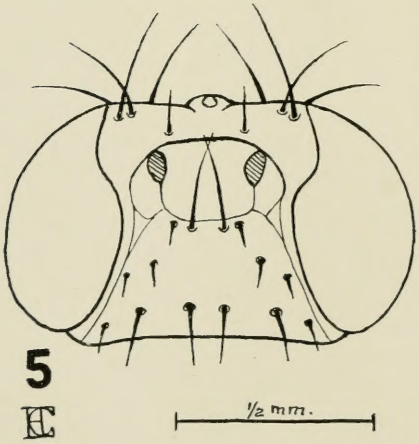

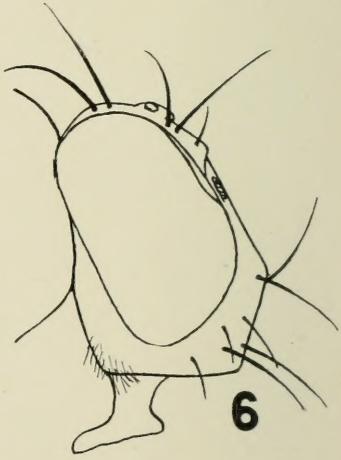

NEW EPHYDRIDAE—CRESSON.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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Descriptions of New Genera and Species of the Dipterous Family Ephydridae.—I.

By E. T. CRESSON, JR., Academy of Natural Sciences, Philadelphia, Pa.

(Plate X)

In working over some material in preparation of monographic reviews of the members of this family, many new and interesting species were found. Some of these represent new genera which, as well as some of the most interesting species, will be described in preliminary papers of which this is the first.

CEROMETOPUM gen. nov.

Suggesting *Mosillus* Latr. in general form, but differing mostly in the structure of the face and in the pectination of the arista. The frontal bristles are well developed, which is not the case with that genus. The face is not deeply excavated beneath the antennae and with no indication of a tuber-

cle in the middle, but is evenly convex, excepting the shallow antennal depression, and entirely transversely wrinkled. From this diagnosis there will be no difficulty in distinguishing the species of this genus. As *Mosillus* is not apparently represented in South America, this genus probably takes its place there. It may be characterized as follows:

Similar to *Mosillus* Latr. in general build. Head (Pl. X, figure 3) as broad as high; eyes large, elliptical, not prominent. Front broader with orbits parallel, smooth except for small distinct pits; besides the usual vertical and ocellar bristles there is a pro- and a reclinate orbital present. Face gently convex, retreating, depressed at antennae; except directly beneath antennae, strongly transversely sulcate, the sulci somewhat tortuous laterally, the elevations interrupted by the suggestion of orbital grooves, the entire face appearing somewhat honey-combed under moderate magnification; facial bristles hair-like, numerous, situated in a pit in each sulcus in position to corresponding with the orbital groove. Clypeus quadrate, very prominent, usually deflexed. Proboscis and palpi small. Antennae very short, third joint quadrate, second weakly spinose, arista distinctly pectinate above. Thorax quadrate, with 1 prescutellar near roots of scutellum, 1-2 postalars, 2 notopleurals, 1 humeral, all weak. Scutellum broad, broadly rounded apically, with 4 marginal bristles. Abdomen ovate in both sexes; genitalia inconspicuous. Legs robust; anterior femora finely ciliate beneath apically, but no spines or bristles.

Genotype.—*Cerometopum mosilloides* n. sp.

Cerometopum mosilloides n. sp. (Plate X, fig. 3).

Entirely black, except palpi white or yellowish, all tarsi except apically, apex of middle and hind femora and their tibiae, entirely yellow; all tibiae silvery outside; anterior tibiae brown. Wings luteous, with yellow veins, but costa darker.

Front shining, with no differentiated areas, but with distinct spherical pits as follows: A pair behind and a pair before the line of anterior ocellus and near anterior margin of front. Face shining, with greenish metallic reflections. Cheeks one-half eye-height with weak bristle. Antennae about one-sixth as long as face, third joint nearly

round, arista with five hairs. Mesonotum opake with greenish gray granular pollinose vestiture and three narrow brown vittae medianly which do not attain posterior margin. Scutellum flattened, of like color and surface. Pleurae except mesopleura polished. Abdomen polished, with slight greenish tinge. Femora polished. Length, 3.0 to 3.5 mm.

♂, Fourth abdominal segment equalling 2 and 3 together, fifth and second subequal.

Holotype.—♂ Baranquilla, Colombia. Collected March, 1912 (Ujhelyi), in the Hungarian National Museum Collection.

Paratypes.—Paraguay: San Barnardino (7, Barbarczy, Feb.-Mar., 1906), Puerto Max, (1, Vezenyi, Jan.-Apr., 1905).

PSILEPHYDRA Hendel.[1]

A species was recognized from Costa Rica as belonging to a new genus, and I had drawn up a description of it as such when the *Supplementa Entomologica* came to hand. Hendel's new genus, erected for a species found in Formosa, was at once recognized as being similar to, if not identical with, my new one. The drawing had been made and engraved, or I would have given figures of characters of more specific importance. In addition to the form of the head, there are other essential characters which make it very probable that the Costa Rican species belongs to this genus. It is extremely interesting that species from so widely separated localities should be discovered about the same time belonging to the same and a new genus. The following notes are based on the examination of the Costa Rican specimens only.

This genus may be distinguished by the peculiar shield-like development of the face which extends rather low, appearing somewhat subhemispherical, being evenly and distinctly convex in all directions, including the cheeks. There are no indications of the usual parafacial grooves or areas, and the face is destitute of characteristic bristles or hairs. In general the face appears vaulted or arched, as is typical with *Ephydra* and *Parydra,* but the mouth is not proportionately so large.

[1]Supplementa Entomologica No. III, p. 99, 1914.

At the first glance its head suggests affinity to *Ilythea,* but on further examination it is seen to belong to an entirely different subfamily. The form of the head, thorax and abdomen, and its chaetotaxy determines its relation to *Hydrina* and *Axysta.* The abdomen suggests *Gastrops,* having apparently only four segments in the male and five in the female with the second and third much longer than the others. The apical margin of the third, in profile, is horizontal as in *Lytogaster* and *Axysta.*

Psilephydra nemorosa n. sp. (Plate X, fig. 4).

Entirely shining black with faint submetallic lustre, or somewhat obscured by the sparse brown pollen and the granular or scrobiculated surface, especially of thorax and scutellum. Face greenish bronze (to whitish in immature specimens), appearing golden from the dense yellowish microscopic pubescence. Halteres black. Legs black with trochanters, apices and bases of tibiae and all tarsi except apices, yellowish. Wings brown hyaline, immaculate.

Vertex smooth, twice or more times as broad as length of front; frontal orbits converging anteriorly. Face one-half as broad as vertex, nearly three times as long as broad, evenly clothed with scattered hairs and dense pubescence. Cheeks as broad as eye-height, without bristle. Antennae with second and third joints subequal, together somewhat globose; arista as long as width of vertex, thickened at extreme base, microscopically plumose.

Mesonotum and scutellum minutely scrobiculate or granulate. Pleurae and abdomen more shining; segment 2 equals 2x1, 3 equals 1.5x2, 4 equals 1. Ventral lobes of dorsal plates nearly contiguous.

Legs with no apparent characteristic bristles. Apical joint of fore tarsi ♂ dilated, with an apical fan of eight or more long hairs, their claws long and stout, so spread laterally as to diametrically oppose each other, their pulvilli also enlarged. Wings with vein 2 as long as ultimate section of 3; 2, 3 and 4 straight, parallel; 5 sinuate; posterior cross vein three times penultimate section of 4. Length 1.5 mm.

Holytype.—♂, Juan Viñas, Costa Rica. Collected May 1, 1910, 4 p. m., (P. P. Calvert) at a forest brook, 2500 feet altitude. No. 6065. Academy of Natural Sciences of Philadelphia.

Paratypes.—2 ♀ 2 ♂ with same data; 1 male, Rio Siquiares, Turrucares, Costa Rica.[2]

[2]Notes on the Costa Rican localities cited in this paper will be found in Transactions, Amer. Ent. Soc., xl, pp. 1-8, 1914.

This species should not be confused with the Formosa species (*P. cyanoprosopa* Hend.) on account of the black halteres and the structure of the fore tarsi of the male, as well as other characters which may be gleaned from the full description given above.

PLANINASUS new genus.

The position of this genus is doubtful. It evidently is not a typical Ephydrid, although superficially resembling some of the genera allied to *Ephydra*. The preapical tibial bristles are well developed as well as the second basal and anal cells. The dorsocentral bristles are in the same series as the prescutellars, and there are two distinct sternopleural bristles. It is probably to a genus belonging to an independent line originating from the common ancestor of the Ephydridae and Drosophilidae. The genus may be characterized as follows:

Head (Pl. X, figures 5-6) higher than long, broader than high. Eyes nearly as high as head, oblique, bare, not protruding. Occiput concave above, vertex sharp and concave. Front broader at antennae than at vertex; ocellar tubercle small, near occiput; inner and outer verticals present, no ocellars or post-verticals, 1 latero-reclinate and 1 mesally inclined orbitals with their bases close and situated opposite anterior ocellus. Antennae widely separated by an oblique flattened area limited above by the transversely straight lunular ridge and extending to near middle of face. Face broad with lower part vertical, transversely convex, with strong bristles in transverse series near oral margin. Antennal foveae apparent, with parafacial groove running close to orbits. Mouth large, as broad as face above; clypeus retracted. Antennae (as in figure 7) so articulated at first joint that the inner surface of the second is turned obliquely forward.

Thorax longer than broad, obliquely as high with sternopleura well developed. One dorsocentral at suture with few setulae anteriorly, 1 pair of widely separated prescutellars in same series as dorsocentrals, 1 post-, 1 supra-alar, 2 notopleurals, 1 or more mesopleurals, 2 sternopleurals, 2 scutellars. Abdomen ovate narrower than thorax.

Legs normal: fore coxae short, far from attaining base of middle pair; preapical bristles on all tibiae. Claws small curved; pulvilli present. Wings elongate with costa unbroken attaining the fourth vein but with small bristles at end of first; auxiliary vein coalescing apically with first; second basal and anal cells distinct, the latter small rounded apically.

Genotype.—Planinasus ambiguus n. sp.

Planinasus ambiguus n. sp. (Plate X, figs. 5-7).

Shining black; lunule area, halteres, coxae, basal half or two-thirds of all femora, bases of fore and hind tarsi, yellow; lower two-thirds of oblique plate metallic-tinged; lower face seen from above densely metallic pale green, becoming opake black or brown in other aspects; lower angles of front velvety black. Mesonotum and scutellum sparsely yellow pruinose; pleura paler more opake than mesonotum. Wings brownish, immaculate; veins black. All macrochaetae strong and black.

Front twice as broad as long, with two reclinate bristles on lunule margin. Face two-thirds as broad as vertex with vertical part one-third the height of head; oblique plate half the width of face, longer than broad, with two long upcurved converging bristles on lower margin; lower face with four erect bristles in transverse series near oral margin, a lateral series of two down-curved hairs near lower orbits, and a pair of erect bristles in a vertical series above the outermost bristles of transverse series. Cheeks very narrow. Antennae as in Figure 7.

Abdomen (partly concealed by the somewhat mutilated wings) appears grayish, opake becoming shining apically. Hypopygium complicated. Fore femora with 1-2 long bristles on lateral flexor margin apically. Wings with second costal section twice as long as third; veins 2, 3, 4 straight, parallel. Length 3.0 mm.

Holotype.—♂, Cachi, Costa Rica, Valley of Rio Naranjo. Collected March 9, 1910, by Dr. P. P. Calvert. In collection at Academy of Natural Sciences, Philadelphia, No. 6069.

Philygria basalis n. sp. (Plate X, fig. 1).

Opake with apex of abdomen polished. Black, with face, third antennal joint inferiorly, tarsi and tibiae in part, yellow. Halteres white, knob with blackish spot. Head and thorax cinereous with brown markings. Abdomen with opake white spots and bands. Wings hyaline with basal infuscation as in Figure 1.

Arista with long hairs above; mesonotum with two dorso-central bristles.

Front with a large deltoid mark laterad of antennae, a round dot below anterior ocellus and a dot at base of vertical bristles, black, leaving narrow orbits and oblique stripe from vertical angles to antennae cinereous; narrow facial and buccal orbits silvery white, complete parafacial groove narrowly brown; median area yellowish white pruinose. Occiput black below. Antennae brown except inferior half of third joint.

Mesonotum with five brown vittae; pleura sparsely cinereous above, with brown stripe across mesopleura. Scutellum brown. Abdomen with segments 1 to 3 sparsely brown pruinose; apices of 2 to 3 margined with silver, broadly interrupted medianly; segments 4 to 5 polished, former with four, latter with three, submarginal silvery dots; all segments with lateral margins narrowly silvery. Femora black, apices yellow; fore tibiae entirely, apices and bases of middle and hind tibiae and median ring on latter yellow; apices of tarsi black.

Front hardly twice as broad as long; orbits nearly parallel. Face abruptly narrowed to about width of third antennal joint, with orbits parallel for short distance then broadening into cheeks; but little depressed below antennae and in profile obliquely protruding below, the prominence shining with convex margin; parafacial grooves above close and parallel, separated by an equally narrow yellow stripe which broadens below into the protruding median area; bristles hair-like. Cheeks hardly as broad as third antennal joint. Latter subconical with upper margin straight; arista hardly half as long as third, with 9-10 hairs.

Dorso-central and intra-alar setulae discernible. Chaetotaxy as in *P. calverti.* Scutellum broad, flat, apex truncate. Venation as in Figure 1. Length 1.5 mm.

Holotype.—♀ Tucuman, Argentina (Vezenyi). Collection of Hungarian National Museum.

Paratype.—1 ♀ Asuncion, Paraguay.

There will be no difficulty in recognizing this species from the drawing of the wing.

Philygria calverti n. sp. (Plate X, fig. 2).

Opake; black, head and thorax cinereous variegated with black and brown spots. Abdomen black, segments 3-5 each with four white spots. Legs brown or black becoming yellow on tarsi. Wings infuscate, with numerous clear white spots as in Figure 2. Arista long pectinate above. Mesonotum with two pairs dorso-central bristles.

Front with spot at base of verticals, an elongate band from cinereous ocellar tubercle to anterior orbits, brown. Broad facial and buccal orbits white; facial groove brown; median area ochreous to white below; lower occiput black. Antennae black with joint 3 yellow below. Mesonotum with rudiments of two approximated median more or less fused stripes, three pairs of large dorso-central spots, three lateral and one

notopleural spots, black or brown. Pleura black below with upper margin and longitudinal stripe over mesopleura cinereous. Scutellum black with basal angles cinereous. Halteres white with apex of knob infuscate. Abdominal spots arranged in four longitudinal series, two on dorsum and one on each ventral lobe of dorsal plate; sometimes apical margins of these segments narrowly cinereous, or the spots may be absent on most segments. Apices of femora, bases and apices of tibiae, and tarsi except apices, yellow.

Front convex, twice as broad as long. Face depressed above, as broad as length of third antennal joint, below strongly, obliquely projecting, with about 5 hair-like side bristles; facial prominence bare, shining, in profile with straight margin. Cheeks hardly more than half as wide as third antennal joint. Antennae with joint 3 subconical, straight on upper margin; arista with 8-9 hairs which are nearly as long as width of third.

Mesonotal setulae indiscernible except in post intra-alar series; no prescutellars, otherwise chaetotaxy normal. Abdominal marginal bristles proportionately long and suberect. Venation as in Figure 2. Length 1.5 mm.

Holotype.— ♀, Alajuela, Costa Rica. Collected September 15, 1909, by sweeping at 3100 feet altitude by P. P. Calvert. In collection at Philadelphia Academy of Natural Sciences. No. 6064.

Paratypes.—1 ♂, Juan Viñas, Costa Rica, April, 1910, (P. P. Calvert); 1 ♂ 1 ♀, Asuncion, Villa Morra, Paraguay (Vezenyi).

Evidently belonging to the *picta* group which has long hairs on the arista and only two dorso-central bristles. It is my pleasure to name this pretty species in honor of my friend, Dr. Philip P. Calvert, who by careful collecting in Costa Rica has brought to light many new and interesting species of this family.

Lytogaster pallipes n. sp.

Shining black, sparingly brown pruinose; antennae except above, palpi, and legs except femora sometimes infuscate medianly, yellow; halteres whitish; face and cheeks sparingly cinereous, narrow orbits densely silvery; wings hyaline, yellowish, immaculate, with yellow veins.

Smooth, except abdomen sometimes faintly sculptured especially basally. Front 1.5 times as broad as long; orbitals small. Face half the width of vertex, twice as long as broad, with weak median tuberosity; upper orbits parallel; bristles minute. Cheeks as wide as third antennal joint; latter large, as broad as long; arista short-haired above.

Mesonotum with dorso-central setulae weak. Scutellum convex, rounded. Abdomen elongate, weakly arched, lateral margins rounded; sparsely minute brown pubescent; segment 2 weakly flattened dorsally; dorsal length of 4 more than total length of 1 to 3. Genital segments scarcely exserted. Wings with second costal section two-thirds as long as third; ultimate section of vein 4 two and one-half times as long as preceding. Length 1.7 mm.

Holotype.—♀ ?, Cachi, Costa Rica. Collected March 10, 1910, at stagnant pool near banks of Rio Reventazon by Dr. P. P. Calvert. In collection of Academy of Natural Sciences, Philadelphia. No. 6068.

Paratypes.—1 with same data; 14, Cartago, January to December; 2, Brook Toyogres near Tierra Blanca, April; 1, Bonnefil Farm, Rio Surubres, October; 1, Turrucares, December. All in Costa Rica.

Distinguished by its pale yellow legs and smooth mesonotum.

Lytogaster granulosus n. sp.

Black, shining, sparingly brown pruinose; mesonotum and scutellum opake; antennae except above, apices of palpi, legs except apices, tawny; halteres whitish, knobs blackish; face, cheeks and pleura sparingly cinereous, orbits densely white; wings hyaline, yellowish, immaculate.

Front twice as broad as long, weakly punctured, opake orbits dilating anteriorly. Face one-third of the width of vertex, three times as long as broad; tubercle weak; cheeks slightly broader than third antennal joint. Antennae elongate; third joint twice as long as broad; arista short-haired above. Entire mesonotum densely, granularly sculptured; acrostical and dorso-central setulae discernible. Scutellum similarly sculptured, quadrate, flat. Pleura sculptured as front. Abdomen finely, closely pitted, becoming more shining laterally and apically; lateral margins rounded; venter hollow; segment 4 equalling 2 plus 3. Wing: Costa with third section 1.25 times as long as second. Length 1.7 mm.

Holotype.—♂ ? Near Guapiles, Costa Rica, June 4, 1909, 1100 feet altitude (P. P. Calvert). Collection at Academy of Natural Sciences, Philadelphia, No. 6067.

Paratypes.—Bonnefil Farm, Rio Surubres, 6, October; Cachi, 1, March; Banana River, 2, November; Juan Viñas, 1, June; all collected by Dr. P. P. Calvert, in Costa Rica.

Although the legs are entirely yellowish, they are darker, are more brownish than are those of *pallipes*, and the mesonotum is not shining.

Gastrops willistoni n. sp.

Shining to polished black, sparingly brown and gray pruinose; antennae except apex, clypeus, proboscis, tibiae, tarsi and wing veins, tawny; halteres, knobs black; wings yellowish-brown, immaculate. Narrow facial orbits densely pruinose; mesonotum subopake with two complete median vittae sometimes more or less coalescing, another laterad interrupted at suture and extending anteriorly along lateral margin to humeral angle, grayish; abdomen bluish-black with a semi-lateral polished bronze spot on segment 4.

Front depressed in middle, with two orbitals. Face two-thirds as wide as vertex, 1.5 times as long as wide; tuberosity above middle; lower slightly retreating part hardly as high as cheeks; five facial bristles with second from uppermost the longest and opposite middle of tuberosity. Clypeus distinct. Cheeks one-half of the height of head, with strong bristle. Third antennal joint twice as long as broad; arista with 12-14 hairs.

Mesonotal bristles strong, normal, scutellum flat, broadly truncate, with two elongate conical or cylindrical apical tubercles, each bearing long bristles; lateral bristles distinct.

Abdomen densely scrobiculate; segment 3 1.5 times as long as 2 and equalling 4; apical margins of all smooth. Legs clothed with long hairs, Hind tibiae more or less polished, swollen and flattened apically. Second costal section twice as long as third; vein 3 sinuate so that first posterior cell is narrowed apically. Length 4.0 mm.

Holotype.—♂ Chapada, Brazil. (H. H. Smith). In the collection at Academy of Natural Sciences, Philadelphia, No. 6066. Possessed through the kindness of Prof. S. W. Williston, the author of this genus, after whom I have the pleasure of naming this large and well marked species.

Paratype.—1 ♀, Bartica, British Guiana.

Allied to *niger* Will. in its immaculate wings with sinuate second vein, but the vittate, subopake mesonotum, the flat bituberculate scutellum and larger size will separate this species.

Explanation of Plate X.

Fig. 1. *Philygria basalis,* wing.
Fig. 2. *Philygria calverti,* wing.
Fig. 3. *Cerometopum mosilloides,* head in profile.
Fig. 4. *Psilephydra nemorosa,* head in profile.
Fig. 5. *Planinasus ambiguus,* head in full.
Fig. 6. *Planinasus ambiguus,* head in profile.
Fig. 7. *Planinasus ambiguus,* right antenna.

New Proctotrypoidea from Australia (Hym.).

By Alan P. Dodd, Nelson (Cairns), Queensland.

The following species have been found in a collection of Hymenoptera from North Queensland. The types are all in the collection of the South Australian Museum, Adelaide, S. A.

The magnification used was two-thirds-inch objective, one-inch optic, Bausch & Lomb.

Family DRYINIDAE, Subfamily Anteoninae..

Genus **Anteon** Jurine.

(1) **Anteon rufiscapus** Dodd. A female of this species has been received from my father, Mr. F. P. Dodd, of Kuranda, and was caught while sweeping on edge of jungle, Kuranda, near Cairns, June, 1913.

(2) **Anteon coriaceus** Perkins. One female taken with the above species.

(3) **Anteon parvulus** Perkins. I have a female of this species caught by Mr. A. A. Girault while sweeping in forest, Nelson, near Cairns, August, 1912.

(4) **Anteon girault**i sp. nov.

♀.—Length 3.50 mm. Like *superbus* Dodd, but the abdomen is black, a little suffused with brown; the antennae are more brown, and the metanotum is without the two grooves.

♂.—Unknown.

Described from a single specimen caught while sweeping foliage in a jungle, December 30, 1911 (A. A. Girault).

Habitat.—North Queensland (Yungaburra, 2500 ft., Cairns district).

Type.—A female tagmounted. This is the eighteenth species of the genus from Australia.

Family SCELIONIDAE, Subfamily Telenominae.

Genus **Telenomus** Haliday.

(1) **Telenomus bicolor** sp. nov.

♀.—Length 0.75 mm.

Head and apical two-thirds of the abdomen black; thorax and basal third of the abdomen golden yellow; legs pale yellow; antennae pale yellow, the club light brown.

Head as wide as the thorax; thorax a little longer than wide, finely polygonally sculptured; abdomen a little longer and wider than the thorax, first and second segments striate, first segment short, second segment very large.

Antennae 11-jointed; scape long and slender equal to next six joints combined; pedicel slender, twice as long as wide; first funicle joint shorter and narrower than the pedicel, twice as long as wide; second and third shorter, but longer than wide; fourth as wide as long; club 5-jointed; joints 1-4 wider than long, first joint small, second the longest and widest.

Forewings reaching a little beyond tip of abdomen; rather narrow; hyaline; marginal cilia moderately long; discal cilia very fine and dense; submarginal vein attaining the costa a little before the middle of the wing; marginal vein not as long as the stigmal which is rather short; postmarginal vein very long.

♂.—Unknown.

Described from a single specimen caught while sweeping in forest, April 13, 1913 (A. P. Dodd).

Habitat.—North Queensland (Nelson, near Cairns). *Type.*—A female on a slide.

(2) **Telenomus otho** sp. nov.

♀.—Length 1.30 mm.

Like *oenone* Dodd, but the forewings are broader, the venation darker, the legs are darker, and the head and thorax are reticulately rugulose.

♂.—Unknown.

Described from two specimens caught while sweeping in forest, April, 1913 (A. A. Girault).

Habitat.—North Queensland (Nelson, near Cairns). *Type.*—A female tagmounted plus a slide bearing antennae and forewings.

(3) **Telenomus oenone** Dodd. This common species has been found in another locality, a female having been caught by Mr. A. A. Girault by sweeping grass, etc., Castle Hill, Townsville, North Queensland, 23rd January, 1913.

(4) **Telenomus oeta** sp. nov.

♀.—Length 1.00 mm.

Like *oenone* Dodd, but the femora are black, antennae black, scarcely suffused with red; the short first abdominal segment is striate, the remaining segments are smooth; antennal club only 5-jointed, the third joint the longest and widest; marginal vein only one-fourth as long as the stigmal.

♂.—Unknown.

Described from a single specimen caught while sweeping in an old Chinese garden, overgrown with weeds, November 3, 1912 (A. A. Girault).

Habitat.—North Queensland (Proserpine, near Bowen.) *Type.*—A female on a slide. If Walker's three species, which are doubtfully *Telenomus,* are included, this will be the twenty-fourth Australian species of the genus.

Genus **Dissolcoides** Dodd.

(1) **Dissolcoides flavinervus** sp. nov.

♀.—Length 1.35 mm.

Like *exsertus* Dodd, but the ovipositor is not exserted and the forewings are not so broad.

♂.—Unknown.

Described from a single specimen caught while sweeping grass and foliage, roadside, jungle, February 28, 1913 (A. A. Girault).

Habitat.—North Queensland (Halifax, Herbert River). *Type.*—A female tagmounted plus a slide bearing antennae and forewings.

Subfamily Scelioninae.

Genus **Paridris** Kieffer.

(1) **Paridris rufiventris** sp. nov.

♂.—Length, 1.45 mm.

Like *tridentata* Dodd, but the metanotum and all the thorax ventrad are bright brownish yellow, the marginal vein is nearly as long as the stigmal, the discal ciliation is fine and dense, and the first funicle joint is as long and as wide as the pedicel. Parapsidal furrows absent.

♀.—Unknown.

Described from a single specimen caught while sweeping in forest, May 10, 1913 (A. A. Girault).

Habitat.—North Queensland (Nelson, near Cairns). *Type.*—A male tagmounted plus a slide bearing antennae and forewings. The sixth Australian species of the genus.

Genus **Ceratoteleia** Kieffer.

This genus is synonymous with *Baryconus* Foerster.

Genus **Baryconus** Foerster.

(1) **Baryconus (Ceratoteleia) fuscus** Dodd. This species, originally caught at Brisbane, has been found at Nelson, North Queensland, a female having been caught by sweeping in forest, 26th June, 1913 (A. A. Girault).

(2) **Baryconus (Ceratoteleia) fasciatus** Dodd. A male of this species was taken by sweeping forest, Mount Pyramid, 1000 feet, Nelson, 27th August, 1912 (A. A. Girault). The pedicel is short; the funicle joints all long and cylindrical; first funicle joint twice as long as wide; second twice as long as the first; remaining joints subequal.

(3) **Baryconus exsertus** sp. nov.

♀.—Length, 2.25 mm. (excluding the ovipositor).

Black, neck of the pronotum and its centre ventrad ferruginous; abdomen a little suffused with brown; legs (including coxae) golden yellow; first four antennal joints a little suffused with red.

Head and thorax with fine dense punctures; parapsidal furrows only indicated posteriorly; postscutellum with a short spine; posterior angles of the metanotum with a sharp spine. Abdomen a little longer than the head and thorax united; distinctly wider than the thorax; first segment with a distinct horn; first and second segments striate; ovipositor exserted for fully the length of the body. Antennae as in *pulcher* Dodd. Forewings as in *pulcher*, but the marginal vein is one-half as long as the stigmal, and the postmarginal is a little longer than the stigmal. ♂.—Unknown.

Described from a single specimen caught while sweeping in forest, Nelson, June 30, 1913 (A. P. Dodd). The fifteenth Australian species of the genus.

Habitat.—North Queensland (Nelson, near Cairns). *Type*. —A female tagmounted plus a slide bearing antennae and forewings.

(4) **Baryconus simplex** sp. nov.

♀.—Length, 1.50 mm.

Black; abdomen dark brown, its base bright yellow; legs (including the coxae), and antennal scape golden yellow; rest of antennae brown.

Head and thorax with very fine surface sculpture, the scutellum smooth; parapsidal furrows distinct. Abdomen petiolate; no longer than the head and thorax united; wider than the thorax; first and second segments striate; first segment as wide as long ,without a horn; ovipositor a little exserted.

Antennae 12-jointed; scape long and slender; pedicel slender, twice as long as wide; first funicle joint shorter and narrower than the pedicel, twice as long as wide; second and third subequal, shorter; fourth as wide as long; fifth wider than long; club 5-jointed, joints 1-4 much wider than long.

Forewings reaching a little beyond apex of abdomen; moderately broad; almost hyaline; discal cilia moderately coarse, not very dense;

marginal cilia rather long; submarginal vein attaining the costa about the middle of the wing; marginal vein nearly as long as the stigmal, which is rather short, very oblique; postmarginal vein twice as long as the marginal; basal vein obsolete. ♂.—Unknown.

Described from a single specimen caught while sweeping foliage in a bog, jungle, July 17, 1912 (A. A. Girault).

Habitat.—North Queensland (Innisfail). *Type.*—A female tagmounted plus a slide bearing antennae and forewings with type appendages of *speciosus* Dodd.

Genus **Baeoneura** Foerster.

(1) **Baeoneura girault** Dodd. A female of this species was caught while sweeping in forest, Nelson, 21st March, 1913 (A. A. Girault), also another female in the same locality 30th June, 1913 (A. P. Dodd). I have verified the 11-jointed antennae.

Genus **Opisthacantha** Ashmead.

(1) **Opisthacantha nigriceps** Dodd. One female specimen caught while sweeping miscellaneous vegetation, Ingham, North Queensland, February, 1913 (A. A. Girault). This is a new locality for the species.

Genus **Sparaison** Latreille.

(1) **Sparaison australicum** sp. nov.

♂.—Length, 2 mm.

Shining black, legs (except the coxae) ferruginous; antennae black.

Head transverse, a little wider than the thorax; coarsely reticulately rugulose; frontal ledge distinct; eyes large, pubescent. Thorax a little longer than wide, very coarsely rugulose; mesonotum large, without furrows; scutellum large, projecting a little over the metathorax, its posterior edge emarginate; metanotum very short. Abdomen sessile; as long as the head and thorax united; scarcely as wide as the thorax; coarsely longitudinally rugulose.

Antennae 12-jointed; scape slender, equal to next three joints combined; pedicel slender, twice as long as wide; first funicle joint as long as the pedicel; second a little shorter; 3-9 subequal, a little longer than wide; last joint as long as the pedicel.

Forewings reaching apex of abdomen, broad, hyaline; marginal cilia short; discal cilia rather coarse and dense; submarginal vein attaining the costa about the middle of the wing; stigmal vein moderately long, very oblique, its apex curved slightly caudad; venation dark fuscous. ♀.—Unknown.

Described from two specimens caught while sweeping in forest, May 9, 1913 (A. A. Girault), and June 30, 1913 (A. P. Dodd). The first species of the genus from Australia.

Habitat.—North Queensland (Nelson, near Cairns). *Type.*—A male tagmounted plus a slide bearing antennae and forewings.

Genus **Cremastoscelio** Dodd.

(1) **Cremastoscelio nigripes** sp. nov.

♀.—Length, 1.25 mm.

Like *flavipes* Dodd, but coxae and femora fuscous, tibiae suffused with yellow; forewings narrower. The mandibles of both this species and the type of the genus are broad, 4-dentate, the outer tooth the largest, the others small. ♂.—Unknown.

Described from a single specimen caught while sweeping in forest, May 10, 1912 (A. A. Girault).

Habitat.—North Queensland (Nelson, near Cairns). *Type.*—A female on a slide.

Genus **Plastogryon** Kieffer.

(1) **Plastogryon aureus** sp. nov.

♂.—Length, 1.25 mm.

Head black; thorax bright brownish yellow, the scutellum much darker; abdomen golden yellow, the apical third dorsad, black; legs and antennal scape golden yellow; rest of antennae brown.

Head transverse, as wide as the thorax; thorax a little longer than wide; very finely sculptured, pubescent; mesonotum without furrows. Abdomen sessile, as long as the head and thorax united, almost as wide as the thorax; first segment rather long, striate; second a little longer than the first, finely polygonally sculptured; remaining segments short.

Antennae 12-jointed; scape very slender, equal to next 4 joints combined; pedicel slender, twice as long as wide; funicle joints filiform, all a little longer than wide; first and second funicle joints a little longer than the following ones; last joint as long as the pedicel.

Forewings when closed extending well beyond apex of abdomen; moderately broad, the apex rather rounded; a little infuscated; marginal cilia moderately short; discal cilia fine and dense; submarginal vein attaining the costa distinctly before the middle of the wing; marginal vein one-half longer than the stigmal, which is rather short; postmarginal vein one-third longer than the marginal. ♀.—Unknown.

Described from one specimen caught by sweeping along military road, March 3, 1912 (A. A. Girault).

Habitat.—North Queensland (Thursday Is., Torres Strait). *Type.*—A male on a slide.

(2) **Plastogryon niger** sp. nov.

♀.—Length, 1.60 mm.

Coal black, tibiae and tarsi ferruginous.

Structure as in *aureus* Dodd, but second abdominal segment is finely rugulose. Forewings reaching apex of abdomen, broad, the apex squarely rounded; venation fuscous; otherwise as in *aureus*. Antennae 12-jointed; scape equal to next 5 joints combined; pedicel slender, twice as long as wide; first funicle joint shorter and narrower than the pedicel, twice as long as wide; 2-4 as wide as long; club wide, 6-jointed, second joint a little the longest and widest. ♂.—Unknown.

Described from a single specimen caught by sweeping in forest, Nelson, June 30, 1913 (A. P. Dodd). The fourth Australian species of the genus.

Habitat.—North Queensland (Nelson, near Cairns). *Type*.—A female tagmounted plus a slide bearing antennae and forewings.

British Guiana Heteroptera.

By J. R. de la Torre Bueno, White Plains, N. Y.

Last year's collections of Heteroptera made by Mr. H. S. Parish in British Guiana I was fortunately able to secure, and the results are presented herewith. Only two papers on this fauna are known to me, one, published by E. P. Van Duzee in Trans. Am. Ent. Soc., XXVII, pp. 343-352, Dec., 1901, under the caption, "Notes on Some Hemiptera from British Guiana," referring to Bartica; and the other by Prof. Herbert Osborn in Ohio Naturalist, V:I:195-204, Nov., 1904, bearing the title, "Notes on South American Hemiptera Heteroptera," and dealing with Bartica material from Parish and with other South American collections otherwise secured. The former paper includes 89 species and the latter 67 species from Bartica. The lot under consideration contains 86 species, including all undetermined forms; 67 have been determined generically and specifically, 15 generically only, and four obscure species remain unplaced except as to family. Of the determined species and genera, 57 were not recorded by Van Duzee and 50 by Osborn; omitting older records, there are among those we are considering 27 species (33 if we include

also those only generically identified) not heretofore known from this part of South America. The genera not heretofore reported including the 6 above, are 24 in number. It will be seen that in spite of the smallness of the number of forms it is not without interest as a help to the proper knowledge of the distribution of forms in the Neotropical Region.

Attention is called to certain variations in classification and in family names. This is owing to the arrangement of families being in accordance with Reuter's masterly new system (Bemerkungen über mein neues Heteropterensystem," Öfr. Finsk. Vet. Soc. Fört. Bd. liv: 1911-12, afd. A, No. 6, pp. 1-62 [of separate?]), a system which, while in my opinion susceptible of certain modifications, is nevertheless a most distinct advance on any now recognized.

It is hoped that this fragment may be found of use and interest in a survey of the neotropical fauna.

Family THYREOCORIDAE.

Cydnus sp. One specimen from Mallali.

Family SCUTELLERIDAE Reut.

Augocoris sexpunctatus Fabr. Four specimens from Mallali.

Family CIMICIDAE (Kirk.)

(= *Pentatomidae* Reut. et auctt.)

Mormidea ypsilon Linneus. Mallali and Bartica in numbers. This is seemingly the most abundant Cimicid as well as one of great range in America South of the Rio Grande. It is somewhat variable in coloration, size, and form of the thoracic spines.

Solubea ypsilongriseus de G. Bartica and Mallali, common. Apparently not heretofore recorded from British, although known from Dutch, Guiana.

Sibaria armata Dallas. One only from Bartica, although both Van Duzee and Osborn have received it in abundance from the same place.

Galedanta myops Fabr. One example from Mallali.

Euschistus acutus Dallas. One each from Mallali and Bartica.

Euschistus heros Fabr. Mallali, one only.

Berecynthus delirator Fabr. Four from Bartica and one from Mallali.

Taurocerus edessoides Spinola. This pretty species is represented by three examples from Bartica.

Arvelius albopunctatus Deg. Mallali, one specimen.

Brachystethus vicinus Sign. Of this species, not recorded heretofore from British Guiana, there are one from Bartica and three from Mallali in the lot.

Edessa vitulus Fabr. One example from Mallali.

Edessa sp. One example of a large form from Mallali.

Edessa rufomarginata De G. Mallali, two specimens.

Edessa parvula Dallas. Three specimens from Bartica of a species which agrees exactly with specimens so identified by Van Duzee. Not heretofore known from the Guianas.

Cataulax subvittatus Walker. This species heretofore apparently known only from Northern Brazil is now recorded from Bartica, whence one example has been received.

Family Alydidae Reuter.
(= Coreidae, Subfamily *Alydinae* L. & S.)

Hyalymenus dentatus Fabr. One only from Bartica.

Hyalymenus vespiformis Fabr. Bartica, one example.

Hyalymenus tarsatus Fabr. Of this common form, there are seven from Bartica and four from Mallali.

Megalotomus pallescens Stål. Of this species, apparently not yet recognized from the Guianas, there is one example from Bartica.

Trachelium tesselatum Dist. Not uncommon in Bartica and Mallali.

Cydamus inauratus Dist. One specimen from Bartica and one from Mallali.

Bactrodosoma parallelum Stål. This species seemingly known previously only from Brazil, is represented by four specimens from Bartica.

Leptocorisa tipuloides De G. Bartica and Mallali, common.

Pachylis hector Stål. Mallali, four adults and one nymph. Apparently not previously known from British Guiana, its southernmost record being Panama.

Nematopus indus Linné. Bartica and Mallali, very common.

Holymenia intermedia Burmeister. One example of this uncommon form from Bartica.

Anisoscelis gradadia Distant. Mallali, one specimen. This form has not been previously recorded from British Guiana.

Spartocera granulata Stål. One from Mallali—a new record for British Guiana.

Margus obscurator Fabr. Bartica, one example. Although this species ranges from Mexico to Chile, there are apparently no records of it from the Guianas.

Namacus annulicornis Stål. Two specimens from Bartica, which agree with a Mexican specimen of this species in my collection. This locality greatly extends the range of the species and is the first record from the Guianas.

Hypselonotus fulvus deGeer. Fourteen specimens from Bartica and one from Mallali of this common form.

Family Dysodiidae Reuter.

Hesus cordatus Fabr. Mallali, one specimen. This doubtfully recorded by Van Duzee (op. c.), but it is doubtless correct.

Dysodius lunatus Fabr. Also from Mallali; one specimen only.

Family Myodochidae.
(= Lygaeidae.)

Oncopeltus fasciatus Dallas. Two examples of this species which ranges from Canada to Brazil. It does not appear to have been previously recorded from the Guianas.

Ninus n. sp. One specimen from Mallali. This does not agree with the one species known from America, and as it is not in good condition, it is best left in this indeterminate state specifically, but is noted for the sake of the generic record.

Micropus variegatus Sign. The two specimens from Mallali are the first recorded from British Guiana, or indeed, outside of Colombia.

Oedancala notata Stål. Bartica and Mallali, very common.

Clerada apicicornis Sign. One example from Bartica, an additional record of this widely spread form, heretofore recorded only from Venezuela for South America.

Heraeus sp. A seemingly new form, one specimen of which is from Bartica. This is not *cincticornis*, with the description of which which it does not agree.

Pamera vincta Say. One specimen each from Mallali and Bartica, agreeing with specimens from the United States in my collection.

Pamera sp. Three examples of an undetermined form from Bartica.

Ozophora gracilipes Stål. The seven specimens from Mallali constitute the first record outside of Brazil.

Neocattarus parvus Dist. Heretofore known only from Guatemala. Two specimens from Bartica and a like number from Mallali.

Cistalia alboannulata Stål. One from Mallali, a new record for this species known only from Brazil.

Gonatas divergens Distant. Bartica and Mallali, fairly common. This has been recorded from the former place by Osborn (op. c.), although somewhat diffidently. My entirely independent identification without previous knowledge of this record substantiates it. The species is somewhat variable, and when greasy loses the distinctive light marks of the hemelytra which makes its recognition difficult, it being described by color characters mainly.

There are two other forms in this family not satisfactorily accounted for, one seemingly a new species, and the other an undescribed genus.

Family Pyrrhocoridae.

Dysdercus ruficollis Linné. One only from Bartica.

Family Tingidae.

Gargaphia nigrinervis Stål. Five specimens from Mallali of this species heretofore only known from Brazil.

Teleonemia prolixa Stål. This form heretofore known only from Brazil and Argentine is now recorded from Mallali, whence two specimens, and Bartica one.

There are two other species of this genus in the lot from Mallali and Bartica, not satisfactorily determined.

Family Macrocephalidae.

Phymata erosa Linné. One from Mallali.

Family Reduviidae.

Pnirontis serripes Fabr. Bartica, one.

Pygolampis spurca Stål. Bartica, three.

Stenopoda cana Stål. One example from Bartica. It has heretofore been recorded only from Brazil.

Rhyparoclopius annulirostris Stål. Bartica two and Mallali one example. Known previously from Brazil only.

Natata fuscipennis Stål. Two specimens of this species from Bartica, making the first record for the Guianas.

Hoplogenius sp. A single specimen from Bartica of a species which seems to belong to this genus, heretofore known only from Patagonia.

Macrophthalmus pallens Lap. One specimen each from Bartica and Mallali.

Lamus geniculatus Latr. A single specimen from Mallali.

Melanolestes morio Erichson. Bartica, one example.

Rasahus hamatus Fabr. Two specimens from Bartica and one from Mallali.

Pothea frontalis Lep. and Serv. Bartica and Mallali, one each of this not uncommon species.

Apiomerus pilipes Fabr. One specimen from Bartica.

Apiomerus elatus Stål. Bartica, one only. Apparently the first South American record.

Apiomerus hirtipes Hahn. One example from Bartica; the first record outside of Brazil.

Micrauchenus lineola Fabr. Five specimens from Mallali and one from Bartica of this common form.

Amauroclopius bispinus Stål. One example from Mallali.

Calliclopius nigripes Linné. Bartica one specimen and Mallali three. A well known form.

Heniartes flavicans Fabr. A common Guianan species represented by three examples from Mallali and one from Bartica.

Zelus (Diplodus) spp. There are six undetermined species in this lot, apparently undescribed, from Bartica and Mallali.

Graptocleptes varians Champ. One specimen of this species, first described from Panama, was received from Bartica, a new record.

Repipta flavicans A. & S. Two specimens from Bartica and three from Mallali.

Atrachelus crassicornis Burm. Three examples from Bartica and one from Mallali. Recorded only heretofore from Uruguay and Argentine.

Ricolla pallidinervis Stål. Bartica, three examples and Mallali two. Thus far known only from Venezuela.

Ploeogaster mammosus A. & S. One example of this from Bartica.

In addition to the species of Reduviidae above enumerated, there are an undetermined Emesine from Mallali; and three specimens from Mallali and two from Bartica of a Nabid near *Carthasis* and forming apparently a new genus.

Family Gerridae.

Brachymetra n. sp. Twenty-three specimens from Mallali which I am unable to satisfactorily place.

Scattered Writings of Dr. H. A. Hagen.

Thanks to Mr. Harry B. Weiss, of the New Jersey Agricultural Experiment Station, our attention has recently been called to two articles, in part by the late Dr. H. A. Hagen, which, from their place of publication, are not likely to be met with by those interested in entomology or in Dr. Hagen. Both appeared in the *Boston Evening Transcript* for 1883. The first, entitled, "Money and What Becomes of it," "written by Dr. H. A. Hagen, of the Agassiz Museum at Cambridge, read at a recent meeting of the Thursday Club," was based on unpublished memoirs of two students of Dr. Hagen's father, Prof. Carl Hagen, of the University of Königsberg, and on the father's papers, and came out in the *Transcript* for February 2. It will be new to some to think of Dr. H. A. Hagen as a political economist. The other article, "The State House in Danger" (*Transcript*, November 15), gives an interview of the anonymous writer with Dr. Hagen in relation to termite injuries to the Capitol at Boston, and extracts from his papers on these insects.

One Hundred Butterflies from the Jamez Mountains New Mexico (Lepid.),

With Notes and Description of a New Species.

By Roswell C. Williams, Jr., Philadelphia, Pa.

The following list of just one hundred species and varieties of butterflies were secured during the season of 1913 by Mr. John Woodgate in the Jamez Mts. of New Mexico at an elevation of from 6400 to 7000 ft.

In most cases good series were forwarded and the dates of capture given below usually represent the first appearance. When no definite dates are given the butterfly was common throughout the month mentioned.

Of the new species received, *Pamphila margarita* was described by Dr. Henry Skinner in the Canadian Entomologist. This list will undoubtedly be added to in coming seasons and may be of interest as no similar lists from that part of the State have been published to my knowledge.

1. **Danais plexippus** L. July and Nov.
2. **D. berenice strigosa** Bates. July.
3. **Euptoieta claudia** Cr. July.
4. **Argynnis bremneri** Edw. Aug. 20, Sept. 3 and 20.
5. **Melitaea acastus** Edw. May 28 to June 15.
*6. **M. fulvia** Edw. June 8.
7. **M. minuta** Edw. July 22.
8. **Phyciodes ismeria** Bd.-Lec. May 14-30.
9. **P. tharos** Dru. May 20 to June 20.
10. **P. camillus** Edw. May 14-29.
11. **P. mylitta** Edw. May-June-July.
12. **P. picta** Edw. June.
13. **Grapta silvius** Edw. July 17-31, Sept. 10.
*14. **G. faunus** Edw. Sept. 13-21, Nov. 10.
15. **Vanessa antiopa** L. Sept. 11-17.
16. **V. milberti** Godt. June 2-6.
17. **Pyrameis atalanta** L. Sept. 15.
18. **P. cardui** L. May-June-July.
19. **Limenitis weidemeyeri** Edw. June 9 to July 4.
20. **Neonympha henshawi** Edw. June 14.
21. **Coenonympha ochracea** Edw. May 28-30.
22. **Satyrus alope ariane** Boisd. July 6 to Aug. 3.

23. **S. meadi** Edw. One female, Aug. 22.
*24. **S. silvestris** Edw. June 5 to July 7.
25. **Chionobas chryxus** Dbl.-Hew. June 30.
26. **Lemonias nais.** July 7.
27. **Thecla crysalus** Edw. July 8-12.
28. **T. melinus** Hüb. June 2.
29. **T. itys** Edw. July 4-12.
30. **T. calanus** Hüb. June 25 to July 4.
31. **T. spinetorum** Boisd. Apr. 20, May 17-21.
32. **T. castalis** Edw. May, July 6.
33. **T. behri** Edw. July 6-11.
34. **T. augustus** Kirby. May 12-14.
35. **T. eryphon** Boisd. May 10-28.
36. **T. apama** Edw. May 14-30, July 2.
37. **Chrysophanus arota virginiensis** Edw. July 3-16.
38. **Lycaena fulla** Edw. July 3-16.
39. **L. behri** Edw. May 25 to June 15.
40. **L. podarce** Feld. June 2-7.
41. **L. melissa** Edw. May 13-30, June 20, July 18.
42. **L. acmon** Dbl.-Hew. May 10-30, June 2-6, July 8-18.
43. **L. ladon cinerea** Edw. May 12-14.
44. **L. ladon arizonensis** Edw. May 12-29.
45. **L. amyntula** Boisd. May-June.
46. **L. isola** Reak. June, Sept. 10, Oct. 14.
47. **L. marina** Reak. Apr. 20, May-June-July 1-15.
48. **Neophasia menapia** Feld. July 17-24.
49. **Pieris sisymbri** Boisd. Apr. 19 to May 14.
50. **P. occidentalis** Reak. June 8 to July 23.
51. **P. occidentalis calyce** Edw. Apr. 15.
52. **P. napi pallida** Scud. May 10 to June 16.
53. **Nathalis iole** Boisd. May 6, June 25 to July 12.
54. **Anthocharis sara reakirti** Edw. Apr. 10 to May 9.
55. **Colias caesonia** Stoll. July 22.
56. **C. eurytheme ariadne** Edw. June 2.
57. **C. eurytheme keewaydin** Edw. May-July.
58. **C. eurytheme pallida** Cockerell. May-July.
59. **Terias nicippe** Cramer. July 19-22.
60. **Papilio polyxenes curvifascia** Skinner. Sept. 13.
61. **P. bairdi** Edw. Aug. 3.
62. **P. rutulus** Boisd. May 13.
63. **P. daunus** Boisd. May 30, June 21, July 11.
64. **P. eurymedon** Boisd. May 26-28, July 4.
65. **P. zelicaon** Lucas. May 1-14.
*66. **Thymelicus garita** Reak. July 1-6.

67. **T. edwardsi** Barnes. July 9.
68. **Pamphila taxiles** Edw. June 22 to July 9.
69. **P. comma colorado** Scud. Sept. 20.
70. **P. juba** Scud. May 19, June-July.
*71. **P. woodgatei** n. sp. Sept. 10-21.
72. **P. rhesus** Edw. May 25.
73. **P. uncas** Edw. June 26.
74. **P. morrisoni** Edw. May 27 to June 30.
75. **P. draco** Edw. June 21.
76. **P. sabuleti** Boisd. June 6.
77. **P. cernes** Bd.-Lec. June, July 1-4.
*78. **P. vestris** Boisd. June 25 to July 9.
79. **P. phylace** Edw. May 25 to June 14.
80. **P. vierecki** Skinner. May 28 to June 26.
81. **P. python** Edw. May.
*82. **P. margarita** Skinner. May 24 to June 9.
83. **P. oslari** Skinner. May 21-30, June, July 1-9.
84. **Amblyscirtes vialis** Edw. May 13 to June 9.
85. **A. aenus** Edw. May 25 to June 12.
86. **A. cassus** Edw. May 30.
87. **Pyrgus tessellata** Scud. May, June, July, Sept. 10.
88. **P. xanthus** Edw. May 12-31.
89. **Thanaos brizo** Bd.-Lec. Apr. 27 to May 24.
90. **T. icelus** Lint. May 14-30.
*91. **T. persius** Scud. Apr. 25-30, May, June, July 1-14, Sept. 10.
92. **T. horatius** Scud.-Burg. May 4-14, July 11 to Aug. 4.
93. **T. propertius** Lint. Apr. 20, May, June 1-6.
94. **T. pacuvius** Lint. June, July 1-7.
95. **Pholisora catullus** Fab. May 19 to June 7.
96. **P. pirus** Edw. June.
97. **Eudamus pylades** Scud. May 10 to June 13.
98. **E. mexicana** Herr.-Sch. June 6, June 21.
99. **E. tityrus** Fab. May 11-31.
100. **E. dorus** Edw. Apr. 19-28.
and **Megathymus yuccae navajo** Skinner. May 8 to June 4, 1912. No individuals appeared, however, in 1913.

*6. **Melitaea fulvia sinefascia** n. aberr.

In the good series of *fulvia* there is a curious ♀ aberration for which I propose this new name. It is the equivalent of var. *obsoleta,* Hy. Edw. of *leanira,* Boisd.

The upper sides of the wings are of a more uniform ground color The black marginal band is present but the submarginal black band or

line is entirely absent. The row of outer yellowish white spots is present. The discal yellowish white band is present, less intense, on the upper wing, but entirely absent on the lower wing. The yellow white spot in the end of cell of upper wing showing in typical examples, is in this one of the ground color. On the under side the black submarginal bands on both the upper and the lower wings are entirely absent.

*14. **Grapta faunus.**

Is perhaps a northwestern form approaching *hylas*.

*24. **Satyrus silvestris.**

Dark as the Edwards figure of the type and with from 0 to 5 very small ocelli some pupilled with a white point. They may be separated from var. *charon,* from Colorado and Utah by the darker color and the more uniform dark under surface of lower wing.

*66. **Thymelicus garita** Reak.

A very dark insect, above, almost black with coppery reflection and in appearance corresponding with the insect figured by Mr. Wright, Plate xxx, No. 408-b-c, as *Pholisora lena.*

*71. **Pamphila woodgatei** n. sp.

♂ Above orange fulvous, borders brown. The border of upper wing extending in one-third of the surface, shading into the ground color and enclosing the five spots of the *comma* group as follows: First three of about equal size and rectangular, the fourth midway between these and the outer edge of the wing, triangular, with the base towards the border, and the fifth spot quadrate, and a trifle farther from the border than the one above. Discal dash heavy and a patch of dark scales beneath it. Base with darker scales.

Lower wing.—With somewhat darker ground color and border. The fulvous patch occupying about one-third of the surface of the wing and extending towards the margin below the outer angle. The border is more decided at the costal and outer margins than at the inner margin. The outer row of under spots is faintly indicated on the upper side. Veins M3, Cu1 and Cu2 (Comstock) conspicuously black.

Under side: costal margin of upper wing lighter orange fulvous, lower portion yellowish, base black with black streak following location of discal patch; border as above, the five spots as above, silvery white.

Lower wing dark olive green and of uniform color except inner border which is lighter fulvous, silvery white spots as follows: A small dash in the triangle formed by junction of veins R1 and R2.

Next a larger double spot consisting of a dash parallel with vein Cu2 and connected with a V at end of cell forming together a hook-shaped spot. Then an outer row of five spots, the first the largest, quadrate, between vein R3 and M1. The second between vein M1 and Cu1 and bisected by vein M3, and this followed by three spots, mere points, in the three following interspaces. The last four spots being in almost a straight line from the outer angle to the center of the inner margin.

Fringes, brownish on upper wing shading to gray on lower anal angle. Body blackish above, ashy whitish below. Palpi white.

Antennae, black below with black tips, gray on under side just below tips. Expanse 18 mm. center of thorax to tip of wing. Fore wing has outer margin rounded and not so produced as in *comma* or *juba*.

♀ Similar in color, the spots above showing somewhat more clearly than in the ♂. Hardly any darkening of the disc at the place occupied by the discal dash in the ♂. The veins of the lower wing not showing prominently black as in the ♂. On the under side similar to the ♂, but spots larger and in two specimens with an additional spot near the center of the costal border, and a spur on the last spot extending out towards the anal angle. Expanse 20 mm.

Differs from any butterfly I have seen of the *comma-juba* group in the shape of the upper wing and the color, and shape and arrangement of the spots on the lower wing surface. Named in honor of Mr. John Woodgate, the collector. From 3 males and 3 females. Types deposited in the collection of the Acad. of Nat. Sci. of Phila.

*78. **Pamphila vestris** Boisd.

The type figured by Mr. Oberthur is somewhat lighter than my specimens, but this may be due to fading of the type. It is a ♀ and shows the two larger hyaline spots. The series from Jamez contains ♀ ♀ with the two spots distinct, with the spots obsolescent, and a good percentage entirely without spots; these may be called

immaculatus n. var.

I cannot however separate *vestris* from *metacomet* Harr., having a good series of the latter from my home collecting ground, Avon, Conn., and from other points in the middle Eastern states.

*82. **P. margarita** Skinner.

This insect is distinct from *pittacus* Edw. The row of spots on the lower wing above and below being in *pittacus*

constantly regular and in a straight line, while in *margarita* the band, while varying from a few spots to an almost continuous band across the wing, is never straight, extending out almost to the outer angle, and the spots always varying in size, giving an appearance decidedly different from *pittacus*, and more like *python*, from which again it differs in size, color and shape of wing.

*91. **Thanaos persius** Scud.

Some of these, a long series, are remarkable for their very small size, a number being 16 mm. from center of thorax to tip of wing.

In conclusion I wish to express my appreciation of the courtesies extended by Dr. Henry Skinner, Curator of the Entomological Section of the Academy of Natural Sciences of Philadelphia, and his valuable assistance and encouragement in the study of these insects.

Fragments on North American Insects—VII.

By A. A. Girault, Nelson (Cairns), North Queensland, Australia.

(Also on page 283.)

Postpupal Development in Chilocorus bivulnerus Mulsant (Col.)

Upon emerging from the pupal stage, the elytra of this beetle are tan-colored, with the red spots pallid, the head and thorax black; four hours later, the natural colors had developed. The pupae were numerous in the middle of June, 1900, at Annapolis, Maryland.

An Ant-lion (Myrmeleonid) Without Food (Neur.)

Several half-grown larvae of a common ant-lion occurring about Annapolis, Maryland, were kept in confinement (box full of sand) without feeding for twenty-five days, when they were thrown out.

Culicid Pupa out of Water (Dip.)

At Granite, Baltimore County, Maryland, the last of August, 1900, some mosquito pupae were found in water in a tree hollow; when transferring them to a tin can, one accidentally lodged upon the side of the can, remaining thus for about twenty hours. When it was washed down into the water it moved off at once, apparently none the worse.

Two Colorado Plant Lice (Hemip.-Homop.).

By C. P. GILLETTE, Fort Collins, Colorado.

(Plate XI.)

Asiphum pseudobyrsa Walsh.

Byrsocrypta pseudobyrsa Walsh:—Proc. Ent. Soc. Phil., Vol. I, p. 306, 1862.

Pemphigus pseudobyrsa Walsh:—Proc. Ent. Soc. Phil., Vol. VI, p. 208, 1866. Thomas:—Rept. Ent. Ill., Vol. VIII, p. 151, 1880. Oestlund:—Aph. of Minn., p. 24, 1887. Packard:—Forest Insects, p. 434, 1890. Hunter:—Aph. of N. A., p. 79, 1901.

Schizoneura populi Gill.:—Ent. News, Vol. XIX, p. 1, 1908.

This species, described by Walsh more than fifty years ago, seems to have no recorded observations upon it since, except for the one which was made by the writer in ENTOMOLOGICAL NEWS for January, 1908, where the winged migrants, found in company with an apterous form of a species of *Chermes* upon the bark of the Balm of Gilead, were taken to be the alate form of the same louse.

Figures A and B of Plate XI were used in that paper in connection with the description of the supposed new species. Figures C, D and E of the same original plate (Vol. XIX, Pl. I), used to illustrate the apterous form, I still believe represented a new species which we shall now have to name *Chermes populi*. The alate form of this species I have never seen, though the apterous lice are very common on cottonwood bark in Colorado and especially on the western slope about Grand Junction.

Asiphum pseudobyrsa has been taken several times by Mr. L. C. Bragg about Fort Collins, Boulder and Denver upon the leaves of *Populus coccinea* and I have also received specimens from Mr. Asa C. Maxson from the same tree at Longmont, Colorado.

This species is a true *Asiphum*, the young lice all leaving the stem-mother gall, which is a small almond-shaped pocket about midway on the midrib of the leaf, very soon after being born, and locating on the under or ventral surface. The larvae locate along the main veins into which they insert their beaks

and their bodies soon become snowy white with a dense covering of short wax threads. See Figure D, Plate XI.

All of the second generation lice become winged. An infested leaf brought to the laboratory by Mr. Bragg, June 17, 1913, had one vigorous fundatrix in the gall with a few first instar young, and outside the gall a large number of second generation lice, two of which had developed wings, probably the first of the year. This leaf is shown in two views at Figures C and D.

Another species, *gravicornis* Patch, described in Bulletin 213, Maine Experiment Station, is very similar in its appearance upon the leaf, but is quite distinct.

The Fundatrix (Plate XI, Figure *E*).

General color a yellowish olive green, lighter over the middle portion of the abdomen; covered more or less heavily with white powder, and some threads about the margins of the body, especially posteriorly; head, eyes and tarsi blackish; legs and antennae dusky; rather broadly oval in form, when fully adult measuring about 4 by 3 millimeters; antenna .55 mm., five-jointed, joint III longest, being a little shorter than joints IV and V together without spur, joint IV shortest, joint II one-half as long as III; permanent sensoria ciliated; beak very short; hind femur and tibia each about .50.

Proportionate lengths of the joints of eight antennae of stem-mothers are as follows:

Joints	I	II	III	IV	V with spur
	10	13	25	10	20
	10	13	25	11	19
	10	11	20	8	16
	10	11	22	8	18
	10	12	22	8	19
	10	12	21	9	19
	10	12	20	9	20
	10	12	23	7	19
Averages	10	12	22.25	8.75	18.75

Alate Fundatrigenia, Plate XI, figures A and B.

The description given by the writer in ENTOMOLOGICAL NEWS referred to above was as follows:

"*Winged Female.*—Length of fore-wing, 3.50 to 3.75 mm.; hind-wing, 2.35 to 2.75 mm. Length of body, 1½ to 2 mm. Antennae, 6-jointed; length, .8 mm. Joints 1 and 2, short and stout, the 2nd a

little longer than broad; 3rd, longest, equaling 4th and 5th together; 5th, a trifle longer than 4th; and 6th distinctly longer than 5th. The proportions of the four distal joints are about as follows: 21, 9, 11, 15. Total length of antenna a little less than one-half length of body. Compound eyes, ocelli, abdomen, tips of tarsi and antennae, and more or less of the thorax above, dusky to black, otherwise pale yellow. The anterior wing has a very distinct, though narrow, black line extending from the base along the subcostal nerve, but a little beneath it and terminating on the costal margin just beyond the stigma. A similar black line starts on the anal margin of the hind-wing close to the body and extends forward and outward to meet the costal nerve and then turns at an acute angle back to the costal margin close to the body. Body and wings are powdered with a white secretion and from thorax and abdomen a white waxy secretion forms in long, slender threads, nearly or quite hiding the body. Antennal spur of 6th joint not over 1-5 length of joint and with a large sensorium at its base, also large oval sensoria near distal ends of joints 4 and 5, and along the underside of joint 3, where there are about 6."

The specimens taken the past summer differ from the above by being somewhat larger, the length of body in plump specimens measuring 3 mm., and the antennae measuring .90. The sensoria on joint III of the antenna are almost uniformly 5, and on joint III, 2, but in some examples they are rather difficult to see well. There is a strong spur near the base of joint III, which does not show in the original figure, but has been added on Plate XI, figure A. The permanent sensoria are ciliated.

Proportionate lengths of antennal joints of 14 alate lice ran as follows:

Joints	I	II	III	IV	V	VI with spur
	10	10	34	16	19	26
	10	11	35	16	20	28
	10	11	36	18	19	26
	10	11	35	16	21	28
	10	11	35	17	18	25
	10	11	34	15	18	26
	8	10	30	16	18	27
	10	11	38	17	22	29
	10	11	34	15	19	27
	10	11	35	16	19	23
	9	10	30	14	16	25
	10	10	33	14	18	22
	9	9	32	15	17	23
	9	9	32	14	16	24
Averages	9.64	10.43	33.79	15.64	18.57	25.64

It is probable that this louse has an alternate host, as the alate form, the second generation, all leave the cottonwoods.

Our records on this louse in Colorado are as follows:

Grand Junction, June 16, 1907; Migrant; Recorded by C. P. Gillette; Host, Populus candicans.

Rocky Ford, May 27, 1908; Fundatrix and 2nd generation; Recorded by L. C. Bragg; Host, Populus coccinea.

Denver, June 16, 1911; Fundatrix and alate migrants; Recorded by L. C. Bragg; Host, Populus coccinea.

Fort Collins, June 17, 1913; Fundatrix and alate migrants; Recorded by L. C. Bragg; Host, Populus coccinea.

Longmont, June 17, 1913; Fundatrix and immature young; Recorded by Asa C. Maxson; Host, Populus coccinea.

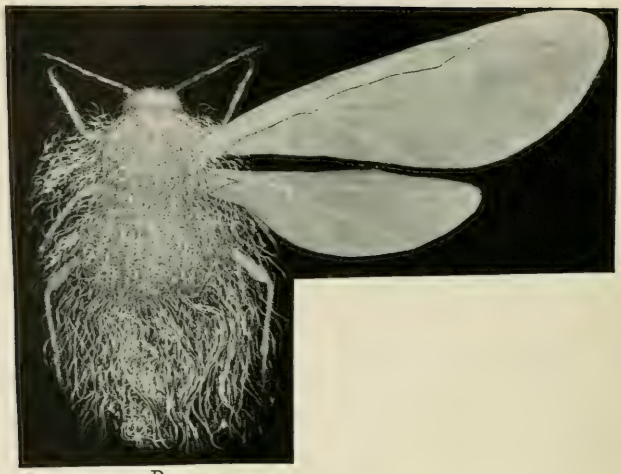
Fort, Collins, June 21, 1913; Migrants; Recorded by L. C. Bragg; Host, Populus coccinea.

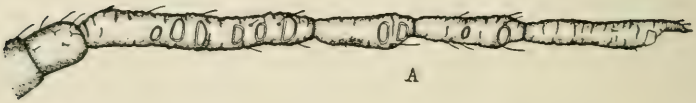
Phyllaphis quercifoliae n. sp.

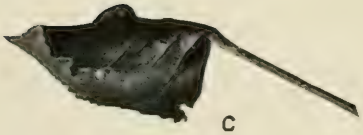
In Bulletin 31, page 116 (1895), of the Colorado Experiment Station, Mr. Cowen gave a brief description of a woolly plant louse found upon the under side of the leaves of scrub oaks in Colorado, which he thought to be Fitch's *Eriosoma querci*, but which he placed in the genus *Schizoneura*. Mr. Davis in his paper in ENTOMOLOGICAL NEWS, Volume XXII, 1911, page 242, accepts Cowen's reference of the species, having no examples for study himself.

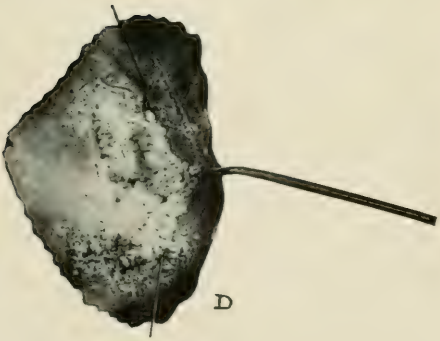
This is a common louse, which I have often seen on oaks in the mountainous sections of Colorado. A rather careful study of the material in hand has convinced me that the Colorado form is a distinct and new species and not the species described or referred to by Fitch, Thomas, Oestlund and Davis and that it is probably distinct from the species recorded by Clarke and Davidson found on the live oaks of California. I am, therefore, offering the notes and descriptions given below. While I am referring this species to the genus *Phyllaphis*, it does not have the short beak, knobbed cauda, or short second antennal joint found in *P. fagi*, the type of the genus, and the hind wings have but one transverse vein, and any of these characters might be considered of generic rank.

The specimens here described were taken at Manitou, Colorado, September 20, 1913, by the writer, on native scrub oak,









COLORADO PLANT LOUSE (ASIPHUM PSEUDOBYRSA).—GILLETTE.

where the species was very common, infesting, for the most part, the under (ventral) side of the leaves. The lice were readily detected by the cottony secretion which they produce in great profusion. I found very few of the summer form, but large numbers of oviparous females in all stages of development and also a large number of pupae, all of which were developing into males. A single winged male was also found. The lice seemed to prefer a folded leaf, and colonies were frequently found in folds that had been produced by leaf-rollers or other causes. The punctures of the insect do not seem to have much, if any, effect to cause the curling of the leaves.

Apterous Virgogenia. This form had mostly disappeared. The examples taken were light green, the color being strongest along the lateral margins of the body; body everywhere covered more or less densely with loose cottony secretion; eyes bright red; head and thoracic segments, antennae, except the terminal segments which are somewhat dusky, and legs yellowish to yellowish brown in color; length of body, 1.10; antenna, .50; joints II, III, IV, and V vary but little in length; joint III is usually the longest of those mentioned, but always shorter than joint VI with the spur; joint IV usually shortest, and even joint II sometimes exceeds joint III in length. The only sensoria present are the permanent ones on joints V and VI. The length of the body as given above may be too little, as the specimens taken are rather old and the body segments are somewhat contracted.

Oviparous Female. The color in this form varies, some examples being uniform straw yellow throughout, while others are as uniformly pink, and others are pale yellowish green. Body everywhere covered more or less densely with loose cottony secretion, the wax plates showing very plainly as minute dark dots upon the dorsum, there being three longitudinal rows on either side of the body, with the usual reduction in numbers upon the thorax and terminal segments of the abdomen; two large circular wax plates of remarkable size occur on the under side of the abdomen upon joints V and VI and partially covering joint VII, each of which has two pores or clear spots in it. These plates are covered with a dense deposit of short wax threads making two very conspicuous white patches which may be seen projecting beyond the lateral margins of the abdomen when viewed from above; eyes bright red; antennae, legs, head, anal plate and gland plates dusky in color; hind tibiae and antenna quite dark; hind tibiae much swollen and set with a large number of oval scent glands; beak just surpassing the second pair of coxae, the tip only being black; pores not

raised above the surface and indicated by a dark ring; antenna .55 to .65; joints III and VI with its spur, about equal; joints II and IV, about equal; joint IV about .80 as long as joint V; joints II and IV are about two-thirds as long as joint III or VI; spur about one-fifth as long as joint VI; body about 1.30 to 1.60; cauda broadly rounded; ventral wax plates about .25 in diameter.

Male. The male is very slender compared with the forms above described and varies in general color about the same as does the oviparous female, the prevailing color being pink at first, the color changing to a brownish yellow with age; head, thorax, antennae and wing veins, blackish; eyes bright red; anal plate black; anterior wings with cubital vein twice forked; posterior wings short and narrow and with one transverse vein only, rising at a point about twice as far from the base of the wing as from the tip. Length of body, .95 to 1.05; wing, 1.40 to 1.50; hind wing, .85 to .90; antennae, 1.10; joints III, IV, V, and VI with its spur sub-equal; posterior wing .90; wing veins all heavy and with narrow dusky margins; stigma of fore-wing lanceolate, narrow and translucent; sensoria of antenna about as follows: Joint III, 4 to 5; joints IV to VI, with 5 to 7 sensoria but usually 6; all sensoria oval or circular and the permanent ones surrounded with cilia; antennal joints very rough and irregular in outline; beak attaining third coxae. A day or two after becoming winged, the males have a few long, fluffy cottony threads over head, thorax, and abdomen, even the legs and antennae being more or less covered with these threads and a powdery secretion.

Eggs. The eggs are deposited singly and are covered with short fragments of waxy secretion from the two large wax plates that are on the posterior ventral surface of the abdomen. The oviparous female places these broken wax threads upon the egg while she is depositing it, by means of her hind tarsi which she rubs over the dense mass of short wax threads and then over the egg. I have watched a similar process in species of *Lachnus*. The color of the recently laid eggs is pale green and in shape they are broad oval, being approximately .50 x .30. The eggs observed were all deposited in a breeding cage and were scattered promiscuously over either the upper or lower surface of the oak leaves.

The fundatrix and alate virgogenia I have not seen.

Mr. Asa C. Maxson, Longmont, Colorado, recently sent me a closely allied but apparently distinct species from the leaves of the live oak taken at Spreckels, California, June 28, 1913. In this sending there were both oviparous and viviparous females but no males or other allied form. These lice differ from those taken from the scrub oaks in Colorado by the more

slender form of the egg-laying females. The general type of antenna is the same in both species and they also have the bright red eyes.

EXPLANATION OF PLATE XI.

Asiphum pseudobyrsa: Figure *B*, Alate migrant of the second generation; *A*, antenna of the preceding enlarged 100 times. From Journal of Economic Entomology, Jan., 1908. Drawings by Miss Miriam A. Palmer. From ENTOMOLOGICAL NEWS, Vol. XIX, Plate I.

Figure *C*: Leaf of *Populus coccinea* showing the stem mother gall of *Asiphum pseudobyrsa* Walsh on the midrib; *D*, the underside of the same leaf showing the colony of young in all stages of development located along the main veins. About two-thirds natural size. Original.

Figure *E*: Stem mother of *Asiphum pseudobyrsa* Walsh, body somewhat shrunken in length; enlarged about 15 diameters. Drawing by Miss Caroline M. Preston.

Some Nomenclatorial Notes on the Dipterous Family Trypetidae.

By E. T. CRESSON, JR.

There has recently appeared in the Memoirs of the Indian Museum, Vol. III, No. 3, a paper by Prof. M. Bezzi, entitled "Indian Trypaneids (Fruit flies) in the Collection of the Indian Museum." This paper not only treats of the Indian species but gives an entirely new classification of the genera of this family. There has long been a want of such a reorganization based more upon structural characters than heretofore, and Prof. Bezzi, who has given much study to the fruit flies of the world, has certainly furnished an excellent foundation for the establishment of the genera of this family.

The family is divided into two subfamilies namely, Dacinae and Trypaneinae. The latter is further divided into three tribes, Ceratitininae, Myioptininae and Trypaneininae. The subfamily Dacinae is not represented within the nearctic zone. It probably includes the remarkable *Toxotrypana* Gers. of Mexico. The tribe Ceratitininae is characterized by having the cilia of the posterior orbits composed of fine black bristles

or setulae which are rarely white; mesonotum usually with black pubescence; third vein usually setulose, at least as far as anterior cross vein. It includes the nearctic genera *Acidia, Strauzia, Trypeta*=(*Spilographa*), *Zonosema, Rhagoletis, Oedaspis, Peronyma, Epochra* and *Aciura.*

The tribe Myioptininae is not represented in this zone. The tribe Trypaneininae is characterized by having the cilia of the posterior orbits composed of thickened, whitish, blunted bristles or setulae; mesonotum with whitish pubescence; third vein bare; proboscis usually long and geniculated. It includes the nearctic genera *Stenopa, Terellia, Tomoplagia*=(*Plagiotoma*), *Neaspilota, Eutreta, Paracantha, Ensina, Euaresta, Tephritis* and *Trupanea.*

This classification is certainly an improvement over the one now used, proposed by Loew, and divides the family into groups which are probably more natural. It was characteristic of Loew to disregard the chaetotaxy, so he had to fall back on the wing pattern in most cases. In the study of this paper of Prof. Bezzi's and of a few others, augmented by a small collection, a few interesting problems have come up, dealing mainly with nomenclature, which have given rise to the following notes:

Trypeta Meig. (*Spilographa* Lw.).

Trypeta was first proposed by Meigen in 1803[1] for the species *Musca arnica, M. cerasi, M. urticae, M. artemisiae.* All are credited to Fabricius. Curiously enough, none of these species was included in the genus by Loew in his Bohrfliegen, 1862, or has been since. The type species was first designated by Coquillett in 1910[2] as *Musca artemisiae* Fab. (1794). This species was one of those originally included under *Spilographa* Lw. (1862) so this designation makes the latter genus a synonym of *Trypeta.* This unfortunately causes some confusion in the conception of the two, but there is no other solution unless the other species originally included under *Spilographa* are not congeneric. The species heretofore known as typical Trypetae will

(1) Illiger Magazin für Insekt. ii, 277.

(2) Proc. U. S. Nat. Mus., xxxvii, 618.

now go under *Terellia* Desv. (1830), with *Musca serratulae* Linn. (1758)=(*Terellia palpata and T. luteola* Desv.) as the type species, designated by Coquillett (1910).

Mr. Coquillett in his Type Species of North American Genera, makes *Oedaspis* Lw. (1862) a synonym of *Orellia* Desv. (1830). For the former he designates *Trypeta multifasciata* Lw. (1850); for the latter *Trypeta wiedemanni* Meig. (1826) (as *Orellia flavicans* new species). The two species are evidently not congeneric, so *Oedaspis* may stand for our species as given in Aldrich's catalogue.

Paracantha Coq. (1899).

This was proposed for *Trypeta culta* Lw. Wied. (1830) as distinct from *Carphotricha* Lw. (1862). There were three species originally included under *Carphotricha,* two of which were designated type species of two genera by Rondani in 1856, *Trypeta guttularis* Meig. (1826) type of *Dithryca* Rond. and *Trupanea reticulata* Schrank (1803) [as *Tephritis pupillata* Fall (1814)] type of *Oplocheta* Rond. This leaves only *C. strigilata* Lw. (1862) for its type species. Should this species be congeneric with one of the other two, then *Carphotricha* will have to fall. As regards *Paracantha,* there is a probability of its being a synonym of *Oplocheta* Rond., but my study of *Trupanea reticulata* is limited to one more or less imperfect specimen. As I am not aware that the type species of *Carphotricha* Lw. has ever been fixed, I herewith designate *Carphotricha strigilata* Loew as such.

Tephritis Latreille.

This genus was first proposed by Latreille in the "Nouveau Dictionnaire d'Histoire Naturelle, Tome XXIV, Tableaux Methodiques," dated "AN XII—1804," page 196, No. 585. The species mentioned under this reference are: *Musca arnica* and *Musca cerasi* Fab. These two species are credited to Linn. by Fabricius in his Entomologica Systematica, iv, pp. 352 and 358. Therefore one of these species is the only one available as the type species of this genus. Coquillett in 1910 quotes the genus as dating from the "Histoire Naturelle des Crustaces et Insectes

Tome XIV, AN XIII," which is equivalent to 1805. The species included under that reference is *Musca solstitialis* Fab. (1781) which seems to be a homonym of the present *Urophora solstitialis* Linn. (1758) and a synonym of the present *Urophora aprica* Fall. (1820). It will be seen that Coquillett's designation makes *Urophora* Desv. (1830) a synonym of *Tephritis* Latr. (1805), thus confusing the present idea of the genus *Tephritis*. This however is happily averted as will be seen below.

Prof. Bezzi in his Indian Trypetidae (1913) cites *Musca leontodontis* Deg. (1776) as the type species of *Tephritis* Latr. (1805) or, as he quotes the reference, "Hist.d.Crust.et Ins., xiv, 389, (1804)." This species was not included under the original description of *Tephritis* Latr., either in 1804 or 1805, and so cannot be the type species of that genus. He evidently is trying to retain the name for the genus as it is now or has been recognized, but his method is impossible. It is strange how the above mentioned "Dictionnaire d'Histoire Naturelle" has been repeatedly overlooked or ignored by most students. It however furnishes an agreeable solution to the present confusion surrounding this genus in the fact that *Musca arnica* Linn. (1758) is a typical *Tephritis* as the genus is now known and is one of the species originally included under the first reference to this name, and I herewith designate that species (*Musca arnica* Linn.) as the type species of *Tephritis* Latr. (1804).

Tephritis platyptera Lw. (1862) is not a typical *Tephritis* on account of its broad wings and radiating arrangement of the marginal spots; furthermore the foremost dorsocentral bristle is removed back from the sutural region to nearly opposite the supra-alar bristles. It seems to belong to *Campiglossa* Rond., but a study of *Tephritis irrorata* Fall. is necessary to make this certain.

Trupanea Schrank.

This name was evidently first used in 1795 in the "Briefe Donaumoor." I have not been fortunate enough to have seen this publication and so must take the record at second-hand. The original wording is Trupanea, but Prof. Bezzi uses an

emended form *Trypanea,* which I do not think necessary. This name unfortunately must take the place of *Urellia* Desv. (1830). This being the oldest genus in the family has influenced Prof. Bezzi to change the family name to agree. Of course he recognizes Meigen's 1800 genera in which case he is within his rights. I do not recognize the 1800 names and so prefer to retain *Trypeta* Meig. instead of *Euribia* Meig. The name of a family is the one first applied to it provided the genus from which it is named is included. The retention of *Trypeta* will necessitate the changing of Bezzi's tribe Ceratitininae to Trypetininae while his subfamily will be Trupaneinae with Trupaneininae as its typical tribe.

Some Facts About the Egg Nest of Paratenodera sinensis (Orth.).

By Harry B. Weiss, New Brunswick, New Jersey.

The egg nest of this striking and beneficial insect is peculiar in that it consists of a central, somewhat horny, core, containing the eggs, surrounded by a porous rind, which undoubtedly serves to protect the eggs from moisture and sudden changes in temperature.

Thermometric tests of the conductivity of this rind were made with quite a few nests, and the following tables, showing the temperature changes of three nests, indicate what happened generally. In each case a hole was drilled in the nest and the bulb of a thermometer inserted so that it occupied the same position as the core. The nests were then placed in an oven, the temperature of which was 160 deg. F. The nest temperature at the start was 64 deg. F., and a thermometer having no nest attached and reading 64 deg. F. at the start registered the oven temperature 160 deg. F. in two minutes.

Egg Nest A.

Temperature at start	64 deg. F.
Temperature at end of 5 minutes	102 deg. F.
Temperature at end of 10 minutes	148 deg. F.
Temperature at end of 12 minutes	160 deg. F.

Rise in 12 min., 96 deg. F.

Egg Nest B.

Temperature at start ..... 64 deg. F.
Temperature at end of 5 minutes .....120 deg. F.
Temperature at end of 8 minutes .....150 deg. F.
Temperature at end of 10 minutes .....160 deg. F.
Rise in 10 min., 96 deg. F.

Egg Nest C.

Temperature at start ..... 64 deg. F.
Temperature at end of 5 minutes .....122 deg. F.
Temperature at end of 10 minutes .....154 deg. F.
Temperature at end of 12 minutes .....160 deg. F.
Rise in 12 min., 96 deg. F.

Conditions were then reversed, and the following tables show what happened when the temperature was lowered. The temperature of the nests at the start was 62 deg. F., and a check thermometer reading 62 deg. F. at the start registered 36 deg. F. in two minutes.

Egg Nest D.

Temperature at start ..... 62 deg. F.
Temperature at end of 5 minutes ..... 48 deg. F.
Temperature at end of 10 minutes ..... 42 deg. F.
Temperature at end of 15 minutes ..... 36 deg. F.
Fall in 15 min., 26 deg. F.

Egg Nest E.

Temperature at start ..... 62 deg. F.
Temperature at end of 5 minutes ..... 47 deg. F.
Temperature at end of 10 minutes ..... 40 deg. F.
Temperature at end of 15 minutes ..... 36 deg. F.
Fall in 15 min., 26 deg. F.

Egg Nest F.

Temperature at start ..... 62 deg. F.
Temperature at end of 5 minutes ..... 46 deg. F.
Temperature at end of 10 minutes ..... 38 deg. F.
Temperature at end of 14 minutes ..... 36 deg. F.
Fall in 14 min., 26 deg. F.

Upon placing other nests in hot and cold water, the following changes took place:

Egg Nest G.

Temperature at start ..... 68 deg. F.
Temperature at end of 5 minutes .....112 deg. F.
Temperature at end of 10 minutes .....114 deg. F.
Water temperature at start .....148 deg. F.
Water temperature at end of 10 minutes .....114 deg. F.

Egg Nest H.

Temperature at start	68 deg. F.
Temperature at end of 5 minutes	116 deg. F.
Temperature at end of 10 minutes	130 deg. F.
Water temperature at start	168 deg. F.
Water temperature at end of 10 minutes	130 deg. F.

Egg Nest I.

Temperature at start	75 deg. F.
Temperature at end of 5 minutes	62 deg. F.
Temperature at end of 10 minutes	59 deg. F.
Water temperature at start	55 deg. F.
Water temperature at end of 10 minutes	59 deg. F.

Egg Nest J.

Temperature at start	74 deg. F.
Temperature at end of 5 minutes	68 deg. F.
Temperature at end of 10 minutes	63 deg. F.
Water temperature at start	54 deg. F.
Water temperature at end of 10 minutes	56 deg. F.

In water the temperature rose 46 deg. F. and 62 deg. F. in 10 minutes, and in air 96 deg. F. in 12 minutes. In water the temperature fell 16 deg. F and 11 deg. F. in 10 minutes and in air 26 deg. F. in 15 minutes.

Even though conditions were imperfect, the tables show that the eggs are not subjected to sudden changes of temperature. Nests which were entirely immersed in water for 1¾ hours, showed interiors perfectly dry. At the end of two hours, however, the porous rind became somewhat moist, but the water had not reached the core.

This porous rind, in practically all nests, varied from two to seven millimeters in width, with an average of 5.6 mm.

Fifteen nests, cut transversely in half, showed the following measurements.

Width of Core.	Width of rind on each side.
12 mm	7 mm
11 "	6 "
13 "	6 "
12 "	7 "
13 "	7 "
14 "	6 "

12 " ..... 5 "
12 " ..... 5 "
12 " ..... 4 "
12 " ..... 2 "
11 " ..... 5 "
10 " ..... 6 "
13 " ..... 6 "
12 " ..... 6 "
12 " ..... 6 "

Twelve nests were weighed, then the cores and rinds separated and weighed by themselves. The table below gives these results.

Nest	Weight	Weight of core	Weight of rind
1	1.85 grams	1.47 grams	.38 grams
2	1.76 grams	1.44 grams	.32 grams
3	1.80 grams	1.54 grams	.26 grams
4	1.31 grams	1.06 grams	.25 grams
5	1.65 grams	1.46 grams	.19 grams
6	2.15 grams	1.78 grams	.37 grams
7	1.82 grams	1.40 grams	.42 grams
8	1.40 grams	1.14 grams	.26 grams
9	1.50 grams	1.18 grams	.32 grams
10	1.10 grams	0.90 grams	.20 grams
11	1.82 grams	1.55 grams	.27 grams
12	1.49 grams	1.20 grams	.29 grams

The average weight of a nest was 1.63 grams, of a core 1.34 grams and of a rind .29 grams, showing that 5-6 of the total weight consists of the core containing the eggs, the remaining sixth, of the porous, protecting rind.

Coming to the number of eggs in a core, these are arranged in from 12 to 18 layers, each containing an average of 15 eggs, making a total average of 225 eggs in each. In Vol. XXIV, No. 9, p. 431 of ENTOMOLOGICAL NEWS, Mr. Laurent records the hatching of 150 nymphs from a small nest and 300 from a large one.

A fascinating account of the habits of these insects and the construction of the nests can be found in Social "Life in the Insect World," by J. H. Fabre.

ENTOMOLOGICAL NEWS.

PHILADELPHIA, PA., JUNE, 1914.

Prevention of Insect-borne Diseases in the Army in Mexico.

An Associated Press despatch to the daily newspapers, dated Vera Cruz, Mexico, May 7, 1914, states that Surgeon G. M. Guiteras, medical officer of that port under the American occupation, has planned a campaign against flies in order to safeguard the public and the army against typhoid fever.

Dr. L. O. Howard, in his book *The House Fly—Disease Carrier,* sums up the ravages of typhoid in the American army during the Spanish War of 1898 as follows:

> Every regiment in the United States service developed typhoid fever..... All encampments located in the Northern as well as in the Southern States exhibited typhoid in epidemic form..... Infected water was not an important factor in the spread of typhoid in the national encampments of 1898, but about one-fifth of the soldiers in the national encampments in the United States during that summer developed this disease, while more than eighty per cent. of the total deaths were caused by typhoid. (Pp. 118, 119).
>
> [And quoting from the report of the Army Typhoid Commission:] "Flies undoubtedly served as carriers of the infection." (P. 117).

Entomologists look to the American Army to make a much better showing in its Mexican experience. It is to be hoped that, whatever that showing may be, it will not be without important effect on the community at large in causing the non-entomological public to realize the influence of insects on human health.

Smicra mariae Riley (Hym.)

On May 3, 1900, a number of individuals of this species were reared from the cocoons of the bagworm, *Thyridopteryx ephemeraeformis* Haworth, taken at Annapolis, Maryland; also May 4, 1901.—A. A. GIRAULT.

Epargyreus tityrus Fabricius in Maryland (Lepid.)

This common butterfly was very common on the wing in Anne Arundel County the first two weeks in August, 1900. They seemed to have gone by the last of the month since it was noted on August 26 that none could be found (Baltimore County). I am indebted to Dr. Henry Skinner for its identification.—A. A. GIRAULT.

Corrections in Phytophaga (Coleop.).

Asphaera apicalis Jac. P. Z. S., 1905, p. 411, should be changed to *variabilis;* the name having been previously used by him for a Brazilian form P. Z. S., 1879, p. 442.

Asphaera marginata Jac. (type in my coll.) is a *Nephrica.*—FRED. C. BOWDITCH, Boston, Mass.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted, always excepting those appearing in the January and February issues of the News, which are generally dated the year previous.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of systematic papers are all grouped at the end of each Order of which they treat, and are separated from the rest by a dash.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

1—Proceedings, Academy of Natural Sciences of Philadelphia. **4**—The Canadian Entomologist. **7**—U. S. Department of Agriculture, Bureau of Entomology, Washington. **9**—The Entomologist, London. **11**—Annals and Magazine of Natural History, London. **13**—Comptes Rendus, Societe de Biologie, Paris. **22**—Zoologischer Anzeiger, Leipzig. **36**—Transactions of the Entomological Society of London. **74**—Naturwissenschaftliche Wochenschrift, Berlin. **79**—La Nature, Paris. **84**—Entomologische Rundschau. **89**—Zoologische Jahrbucher. **119**—Archiv fur Naturgeschichte. **153**—Bulletin, American Museum of Natural History, New York. **164**—Science Bulletin, University of Kansas, Lawrence. **179**—Journal of Economic Entomology. **180**—Annals, Entomological Society of America. **189**—Journal of Entomology and Zoology, Claremont, Calif. **216**—Entomologische Zeitschrift, Frankfurt a. Main. **244**—Zeitschrift, Induktive Abstammungs und Vererbungslehre, Berlin. **254**—Archives de Parasitologie, Paris. **281**—Annals of Tropical Medicine and Parasitology, University of Liverpool, Series T. M. **284**—Bulletin, Museum National d'Histoire Naturelle, Reunion Mensuelle des Naturalistes du Museum, Paris. **285**—Nature Study

Review, Ithaca, N. Y. **286**—Archiv fur Mikroskopische Anatomie und Entwicklungsgeschichte, Bonn. **313**—Bulletin of Entomological Research, London. **359**—Connecticut Agricultural Experiment Station, New Haven. **369**—Entomologische Mitteilungen, Berlin-Dahlem. **447**—Journal of Agricultural Research, Washington. **451**—U. S. War Department, Office of the Surgeon General, Washington, D. C. **462**—The Butterfly Farmer, Truckee, Cal. **472**—Bulletin of the Charleston Museum, Charleston, S. C. **473**—Mesure d'un Arc de Meridien equatorial en Amerique du Sud, Paris.

GENERAL SUBJECT. **Brebion, A.**—Utilisation des insectes en Indochine, **284,** 1913, 277-281. **Crampton, G. C.**—The ground plan of a typical thoracic segment in winged insects, **22,** xliv, 56-67. **Fernald, H. T.**—Notes on some old European collections, **180,** vii, 89-93. **Hansel, S.**—Begriff und wesen der metamorphose der insekten, **74,** xii, 241-46. **Hosford, R. C.**—Segmentation of the head of insects, **164,** viii, 65-72. **Howard, L. O.**—Report on parasites, **180,** vii, 86-8. **Hunter, S. J.**—Department of entomology of the University of Kansas. Historical account. (Insect types and cotypes in the Entomological Museum.) **164,** viii, 1-61. **Lampe, Ed.**—Verzeichnis der entomologischen schriften des Arnold Pagenstecher, **216,** xxviii, 9-10. **O'Kane, W. C.**—Further experience with an insectary, **179,** vii, 181-3. **Peairs, L. M.**—The relation of temperature to insect development, **179,** vii, 174-81. **Reuter, O. M.**—Lebensgewohnheiten und instinkte der insekten bis zum erwachen der sozialen instinkte. Berlin, R. Friedlander & Sohn, 1913, 448 pp. **Shelford, V. E.**—The use of atmometers to measure evaporation in the study of insects. The importance of the measure of evaporation in economic studies of insects, **179,** v, 229-33, 249. **Weiss, H. B.**—Notes on three imported insects occurring in N. J., **179,** v, 250-1.

ARACHNIDA, ETC. **Berland, L.**—Araignees, **473,** x, 79-119. **Borini, A.**—Pseudo-appendicite da Ascaridi, **254,** xvi, 428-31. **Haller, B.**—Das zweite fachertracheenpaar der mygalomorphen spinnen, **286,** lxxxiv, 438-45. **Heath, E. F.**—A phalangid drinks milk, **4,** 1914, 120. **Laurens, G.**—Corps etranger des fosses nasales expulsion de myriapodes, **254,** xvi, 434-7.

APTERA AND NEUROPTERA. **Fernald & Bourne**—Notes on the onion thrips and the onion maggot, **179,** v, 196-200. **Hilton, W. A.**—The central nervous system of Aphorura, **189,** v, 37-42. **Houser, J. S.**—Conwentzia hageni. Life history notes and variations in wing venation, **180,** vii, 73-6. **Merle, R.**—Les mouches aux yeux d'or, **79,** xlii, 305-7.

Bacon, G.—Two n. sps. of Collembola from the mountains of Southern California, **189,** v, 43-6. **Longin Navas, R. P.**—Neuropteres, **473,** x, 69-78.

ORTHOPTERA. Gerhardt, U.—Copulation und spermatophoren von Grylliden und Locustiden.—II, **89,** xxxvii, Abt. f. Syst., 1-64. **McConnell, E.**—Some remarks on the abdominal air sacs of Stenopelmatus, **189,** v, 47-9. **Toedtmann, W.**—Die spermatozoen von Blatta germanica, **119,** 1913, A, 11, 179-85.

Borelli, A.—Dermapteres, **473,** x, 63-8. **Chopard, L.**—Gryllidae, **473,** x, 45-52. **Hancock, J. L.**—Tetriginae, **473,** x, 53-6. **Rehn & Hebard**—A study of the species of the genus Dichopetala (Tettigonidae), **1,** 1914, 64-160. **Shelford, R.**—Blattides, Mantides et Phasmides, **473,** x, 57-62.

HEMIPTERA. Branch, H. E.—Morphology and biology of the membracidae of Kansas, **164,** viii, 75-115. **Childs, L.**—The anatomy of the Diaspinine scale insect Epidiaspis piricola, **180,** vii, 47-60. **Moore, W.**—A comparison of natural control of Toxoptera graminum in So. Africa and the U. S., **180,** vii, 77-85. **Savage, R. E.**—The respiratory system of Monophlebus stebbingi, var. octocaudata, **313,** v, 45-7.

King, G. B.—The genus Pseudokermes in Montana, **179,** v, 246-7. **Urich, F. W.**—Description of a new frog-hopper from Br. Guiana, **313,** v, 43. **Whitney, B. B.**—A new California coccid infesting manzanita, **189,** v, 50-2.

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Gibson, A.—A new destructive cutworm of the genus Parosagrotis, occurring in western Canada, **179,** v, 201-3. **Rosenberg & Talbot**—New South Am. butterflies, **36,** 1913, 671-82. **Sosnosky, T. von**—Exotische falterpracht: 56 exotische schmetterlinge in

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Cockerell, T. D. A.—The fossil and recent Bombyliidae compared, **153,** xxxiii, 229-36. **Emery, W. T.**—(See above.) **Enderlein, G.**—Zur kenntnis der Stratiomyiiden . . . Familien: Hermetiinae, Clitellariinae, **22,** xliv, 1-25. **Greene, C. T.**—The cambium miner in river birch (Agromyza pruinosa), **447,** i, 471-4. **Hendel, F.**—Neue beitrage zur kenntnis der Pyrgotinen, **119,** 1913, A, 11, 77-117. **Ludlow, C. S.**—Disease-bearing mosquitoes of North and Central America, the West Indies, and the Philippine Islands, **451,** Bul. 4, 96 pp. **Malloch, J. R.**—A synopsis of the genera in Chloropidae, for No. America, **4,** 1914, 113-20. American black flies or buffalo gnats, **7,** Tech. Ser., No. 26. **Speiser, P.**—Ein neues beispiel vicariierender dipteren arten in Nordamerika und Europa, **22,** xliv, 91-4.

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Andre, E.—Mutillides avec une note sur le genre Knowiella, **473,** x, 1-4. **Bradley, J. C.**—The Siricidae of North Am., **189,** v, 1-35. **Buysson, R. du**—Scoliides, Chrysidides, Vespides, Eumenides, **473,** x, 5-12. **Cockerell, T. D. A.**—New and little known bees, **9,** 1914, 114-19. Descriptions and records of bees.—LVIII, **11,** xiii, 424-33. **Isely, D.**—The biology of some Kansas Eumenidae, **164,** viii, 235-309. **McColloch & Yuasa**—A parasite of the chinchbug egg, **179,** v, 219-27. **Meade-Waldo, G.**—Notes on the Apidae in the collection of the British Museum, **11,** xiii, 399-405. **Perkins, R. C. L.**—On the hymenopterous genera Trichogramma and Pentarthron, **36,** 1913, 603-5. **Santschi, Dr.**—Formicides, **473,** x, 33-44. **Strand, E.**—Tenthredinides, Pompilides, Crabronides, Apides, **473,** x, 13-32. **Triggerson, C. J.**—A study of Dryophanta erinacei and its gall, **180,** vii, 1-46. **Williams, F. X.**—Notes on the habits of some solitary wasps that occur in Kansas, with description of a n. sp. The Larridae of Kansas, **164,** viii, 121-213, 223-30.

OBITUARY.

Dr. Jakob Huber, Director of the Museu Goeldi, Belem de Para, Brazil, died on February 18, in his forty-sixth year.

John A. Grossbeck, of the American Museum of Natural History, New York City, formerly of the New Jersey Agricultural Experiment Station under the late Prof. John B. Smith, well-known for his work on North American Geometridae, died in Barbados, British West Indies, on April 8. He was born in Paterson, New Jersey, February 2, 1883.

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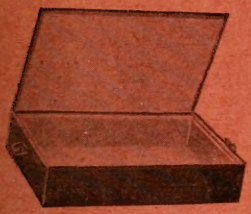

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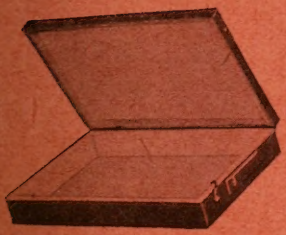

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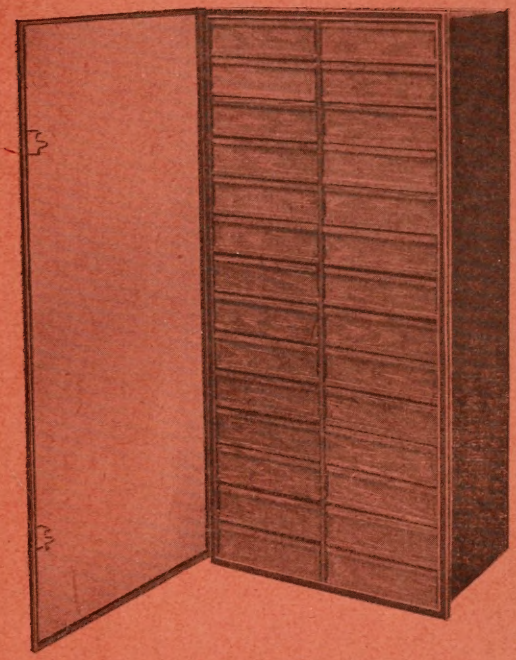

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